# **ENGINEERING-SCIENCE, INC.**

1700 Broadway, Suite 900 Denver, Colorado 80290 phone: (303) 831-8100 • telecopy (303) 831-8208



#### **MEETING NOTES**

TO:

Distribution

DATE:

November 9, 1993

FROM:

Philip Nixon

MEMO #:

SP307:111193:01

PROJECT #:

**DISTRIBUTION:** 

Solar Pond IM/IRA

ATTENDANCE:

Harlan Ainscough, CDH

Arturo Duran, EPA

Mark Austin, EG&G

Phil Nixon, ES

Rich Stegen, ES

Ted Kearns, DOE/KMI Frazer Lockhart

Pat Breen. ES

Andy Ledford, EG&G

Vern Witherill, DOE

Attendees

Richard Henry

L. Benson

A. Conklin

P. Breen

H. Heidkamp

K. Cutter

D. Myers

S. Stenseng

A. Fricke

B. Snyder

T. Kuykendall

T. Evans

B. Cropper

C. Montes

B. Wallace, EG&G (Admin.

Record) [2]

K. Ruger, EG&G

K. London, EG&G

R. Wilkinson

Steve Howard, DOD/SMS

Jim Hartman, DOE

Helen Belencan, DOE

Ernie O'Tool, DOE/MMES

Steve Paris, EG&G

SUBJECT:

ADMINISTRA

Solar Pond IM/IRA Team Meeting

R9-7-33.WPF

1

### 1) Schedule Review

Andy Ledford presented a working schedule for the month of November. He indicated that the schedule was not complete in that the logic ties are still being reviewed, but the internal baseline dates reflect the DOE/EG&G working schedule. Some of the activities are proceeding according to schedule and some of the activities are behind schedule. EG&G is reviewing the logic ties to determine if logic changes need to be made or if management measures need to be taken to get meet the schedule.

Arturo Duran questioned whether the selection of a closure/remediation alternative would be impacted since the data from the ongoing drilling in the B-series ponds would not be available during the detailed analysis of alternatives. Phil Nixon indicated that it would not likely have an impact on the alternative selection; however, the data may be important for determining details of how the selected alternative will be implemented. As previously agreed, the data will likely be included in the second draft of the IM/IRA decision document.

#### 2) Liner Issue

Andy Ledford stated that EG&G had added an activity to the schedule which is for the EG&G lawyers to review the technical/legal position for closing the Solar Evaporation Ponds with the liners in-place. Frazer Lockhart indicated that DOEs lawyers recognized that the issue is a gray area with respect to regulatory interpretation, and feel that there may be room for alternative interpretations.

Harlan Ainscough asked whether ES had identified any precedent setting test cases in the State of Colorado. Phil Nixon responded that the investigation was ongoing. A case similar to the OU4 Solar Evaporation Ponds had not been identified where the question of closing ponds similar to a landfill required a Certificate of Designation was challenged. Frazer Lockhart indicated that other sites facing the issue had negotiated a solution to their issues without having to challenge the regulations. Harlan indicated that the CDH has been reviewing their own records and have determined that they have consistently applied the regulations to other facilities closing surface impoundments.

Frazer Lockhart stated that it would be best to have the issue resolved as early as possible so the project could move forward without re-addressing this issue closer to the time of implementation.

# 3) OU9 Old Process Waste Lines (OPWLs)

Steve Hughes discussed the results of the ES background data review for the OU9 OPWLs. He indicated that the lines which are likely to be impacted by the OU4 closure were primarily waste transfer lines to the Solar Evaporation Ponds, from the Solar Evaporation Ponds, and for waste transfer between the Solar Evaporation Ponds.

Therefore, the OU4 RFI/RI characterization data should be adequate for assessing the potential contamination from these lines. It was agreed that OU4 will not be required to implement further characterization studies on these annexed lines.

Frazer Lockhart indicated that a letter had been drafted for submittal to the CDH/EPA to formalize the transfer. OU4 will then have the responsibility to determine how the lines will be addressed. ES will work with Mark Austin to identify sources of information for all the utilities that are located within the OU4 area and to obtain data to develop and evaluate remedial alternatives for these utilities.

### 4) D&D of Building 788

Vern Witherill specified that a decision has been made to delete the D&D of Building 788 from the OU4 Solar Evaporation Pond IM/IRA scope of work so that the removal can be expedited. DOE intends to begin the removal in April/May of 1994 and complete the removal by October/November of 1994 so that the site will be ready for the OU4 Solar Evaporation Pond closure/remediation activities to begin in the spring of 1995. DOE is generally trying to schedule all construction activities in the spring, summer, and fall seasons. Arturo Duran indicated that the D&D schedule is extremely aggressive. A separate meeting will be held to determine whether the removal will be performed according to an IM/IRA decision document or a RCRA Closure plan.

### 5) Chemicals of Concern

Leigh Benson provided a spreadsheet that listed the COCs for both surficial and vadose zone soils. The table also identifies the COCs that were included due to the historical data. ES committed to add the 95% UCL results for the combined (historical and RFI/RI) and RFI/RI data sets to the table. Harlan Ainscough stated that CDH was having second thoughts about using the 95% UCLs for comparison to PRGs. CDH might prefer to compare the PRGs to the maximum values because maximum values are typically preferred for small data sets. Leigh Benson indicated that the OU4 data set should be large enough such that the 95% UCL is appropriate for use. Frazer Lockhart stated that DOE preferred to use the 95% UCLs because the Gilbert statistical methodology does not include a screen for outlier data points which could result in an unrealistic maximum value. This issue was left unresolved but ES will develop a path forward for discussion at the next team meeting.

Amy Conklin asked whether the data analysis activities should focus on the combined data set or only the recent RFI/RI data. It was discussed that the historical data for semi-volatile compounds was suspect and that many of the semi-volatile organic COCs identified for the vadose zone are associated with the historical data and were not detected in the RFI/RI program. Phil Nixon proposed deleting vadose zone COCs that are not COCs in the surficial soil; are vadose zone COCs due to historical data only; and were not detected in the RFI/RI vadose zone samples. This issue was unresolved. **ES** 

was tasked to provide a rationale for using the 95% Upper Confidence Limit (UCL) instead of the maximum detected concentration. In addition, ES was tasked to compare the data sets (combined historical and RFI/RI data, to just the RFI/RI data) and recommend an approach for developing a data set for comparison to the PRGs. This will be issued by the close of business on Thursday November 11, 1993 for team review, and for subsequent resolution at the November 15, 1993 team meeting. It is anticipated that Joe Sheffel (CDH) will attend the meeting to participate in this resolution.

#### 6) PRGs

Phil Nixon presented the preliminary results of the PRG calculations for the future onsite resident, the construction worker, and the future worker scenario. It was agreed that the future onsite resident scenario was the appropriate scenario for consideration with respect to surface soils because a formal future land use determination has not been finalized. The future construction worker would be used for the vadose zone soils because onsite residents would not be exposed to vadose zone soils. This approach is consistent with the Risk Assessment Guidance for Superfund (RAGs). Arturo Duran questioned this approach and will consult with the EPA risk assessment experts on this issue. Frazer Lockhart requested that the CDH and EPA consider what mechanism/document would be acceptable to validate a future land use determination. DOE is currently conducting a study to determine the land use for the Rocky Flats site.

The PRGs for a few COCs may be established by the background concentrations since it has been agreed that DOE would not be required to remediate to concentrations that are less than background concentrations. ES will evaluate the background data from Rock Creek with respect to the data from the Background Geochemistry report to see if the Rock Creek results are a reliable source of background data.

Phil Nixon presented a few preliminary maps for metal and radionuclide COCs in surface soils (maximum concentrations) to show where the OU4 analytical results (historical and RFI/RI) may exceed the calculated PRG or background concentration. It was specified that the maps would likely change because the QA/QC procedure had just been implemented and the 95% UCL data had not been included in the mapping. The preliminary mapping indicated that surficial soil contamination may be present in the immediate vicinity of each of the ponds and in the area north of the ponds. It was discussed that both the DOE and regulatory agencies would benefit if surrounding contaminated soils were consolidated into the Ponds prior to constructing an engineered cover. This would minimize the future migration of the contamination at a reasonable cost by limiting the areal extent of the engineered cover and isolating the contaminated soils from the environment.

Although all parties agreed that consolidating contaminated media under an engineered cover would be mutually beneficial, it was recognized that the regulatory issue of placement could hamper its implementation. In order to effectively implement this strategy, the Corrective Action Management Unit (CAMU) concept would need to be adopted for the OU4 IM/IRA. Harlan Ainscough specified that the CDH had not adopted the CAMU concept and therefore it was not available for use. Although CDH has not formally adopted the CAMU provisions, Rich Stegen indicated that Section 19 of the IAG allows adoption of the CAMU concept outside of the RCRA and CERCLA process. This IAG provision is appropriate since soil remediation should be viewed as a corrective action as opposed to a RCRA closure activity.

Harlan Ainscough specified that CDH might require the removal of some soils at concentrations exceeding the PRGs even though they would be beneath an engineered cover. DOE responded that this would be considered if the risks from leaving the contamination in-place were significant and the contaminants had the potential to be mobile. CDH has not identified the criteria for defining what constituted "significant contamination". This is an important issue that needs to be resolved and will be included as a future agenda item.

Harlan Ainscough stated that Joe Sheffel in the CDH risk assessment group was concerned that some TBCs based limits could be more stringent than the PRGs calculated for human health. ES provided tables to Harlan Ainscough identifying exposure limits for ecological protection that were developed for the Lowry Air Force Base in Colorado. These tables were submitted for information only because it was decided at the November 2,1993 team meeting that chemical specific ARARs/TBCs for ecological receptors would not be considered in the OU4 IM/IRA. It was agreed at that time that the ecology of the site is heavily modified by industrial activities, and that the ecological impacts would be minimal with respect to the OU4 IM/IRA.

## 7) ARARS

It was agreed that the ARAR table format that was presented at the previous meeting was adequate for the IM/IRA-decision document.

# 8) Closure Performance Standards/Criteria

It was agreed that the closure performance standards/criteria were developed to add an engineering component to the regulatory requirements, and not to limit the design flexibility. It was agreed that the hazardous waste disposal siting criteria would not be addressed since it was unlikely that such an alternative could be pursued.

### 9) Technology Development

Phil Nixon distributed a working draft copy of portions of the IM/IRA decision document Part I and Part III for team review. He indicated that this information was developed to provide a basis for the detailed analysis of alternatives and was submitted to keep the team informed. **Comments were requested by November 23, 1993.** The document will be modified to incorporate the results of the detailed analysis of alternatives and to address team comments.

The team reviewed the ES strategy to consolidate the closure/remedial alternatives. Arturo Duran specified that he did not want to spend a great deal of time analyzing alternatives that had a low probability of being selected. P. Nixon responded that the purpose of the consolidation was to try to reduce the level of effort and expedite the detailed analysis of alternatives. ES will respond to comments on the consolidated alternatives list and continue to use this for the detailed analysis of alternatives.

### 10) RFI/RI drilling status

Pat Breen reported that drilling in the B-series Ponds had begun on Saturday November 6, 1993, and was scheduled to be complete by November 11, 1993.

# 11) Phase II RFI/RI Workplan

Mark Austin presented an outline for the Phase II RFI/RI workplan for team review. Andy Ledford indicated that there is a discrepancy in the IAG dates for the workplan since it is now included as part of the OU4 IM/IRA decision document. The final IM/IRA will not be submitted until late in 1994, whereas the target date to begin the RFI/RI studies is September 1994. This issue will be discussed and resolved at a subsequent meeting after the CDH/EPA have an opportunity to review the schedules and IAG requirements.

Philip Nixon, Project Manager

### OU 4 -SOLAR EVAPORATION PONDS PHASE I RI/RFI & IM/IRA PROGRAM NOVEMBER 15, 1993

AHACAMENT | SP307-111193-01 Page 108 |

8:00 - 9:00

1. Chemicals of Concern / PRG's - L. Benson / A. Conklin

CDH Concerns With Using The 95% UCL vs Max Value

· Use of Phase I or Historical Data In Calculations

CDH Concerns With Not Using TBC's

CDH Concerns With Using Rock Creek as Background

9:00 - 9:45

2. CAMU / Movement of Contaminated Media - H. Ains∞ugh / R. Stegen

How Far Can It Be Moved

Section 19 of The IAG's Application to CAMU

9:45 - 10:00

3. Break

10:00 - 10:15

4. Schedule Status - A. Ledford

10:15 - 10:45

5. Isopleth Map - P. Nixon

Extent of Contaminates

10:45 - 11:15

6. ARARS - R. Stegen

Progress Report

11:15 - 11:30

7. Building 788 - A. Ledford

Wednesday's Strategy Meeting Brief

11:30 - 11:45

8. RFI/RI Drilling Status - R. Henry

Completion of B North

Status of B Center

11:45 - 12:00

9. Remedial Alternatives - P. Nixon

Comments on The Early Draft IM/IRA Parts I and III

Consolidation of Alternatives

12:00 - 1:30

10. Lunch

1:30 - 2:00

11. Issue Resolution Methodology

Finalized Comments on The Methodology

2:00 - 2:30

12. Waste Handling / Disposal - M. Austin

How to Address "Liners Removed" Alternatives

- Interim Storage, Transportation, Disposal Assumptions

- Cost Estimates & Fatal Flaw Criteria?

Removal Of Clarifier

2:30 - 2:45

13. New Issues / Next Weeks Agenda

#### Remedial Alternatives

- I. No Further Action (1)
  - A. Regrade and seed
  - B. Post-closure monitoring
- II. Containment of Contaminated Materials without Treatment
  - A. Cover systems
    - Backfill and seed (2)
    - Temporary cover (3)
    - Engineered cover (4)
      - Cover alternatives 1-4
  - B. Post-closure monitoring
- III. Containment of Liners with Insitu Soil Treatment (5 & 8)
  - A. Liners
    - No Treatment
    - Partial Dismantling and removal (hot spots)
  - B. Insitu Soil Treatment
    - Solidification
  - C. Cover system
    - Backfill and seed
    - Engineered cover
      - Cover alternatives 1&2
  - D. Post-closure monitoring
- IV. Removal of Contaminated Liners (Partial or Total) (6 & 7)
  - A. Liners (total or hot spots)
    - Containerization
    - Size reduce and containerization
  - B. Soils (total or hot spots)
    - No treatment
    - InSitu treatment
      - solidification/stabilization
      - thermal desorption
  - C. Cover systems
    - Backfill and seed
    - Engineered Cover
      - cover alternatives 1&2
  - D. Post-closure monitoring
  - E. Liner Disposition
    - Disposal
    - Storage
- V. Removal of Contaminated Materials (Partial or Total) With Exsitu treatment (9, 10, and 11)
  - A. Liners (total or hot spots)
    - Containerization
    - Size reduce and containerization
  - B. Soils (total or hot spots)
    - Containerization
    - Exsitu treatment

AHachment 2 SP307 11119361 Rigeacta

- solidification/stabilization
- soil washing
- solvent extraction
- degradation
- thermal desorption
- C. Cover systems
  - Backfill and seed
- Post-closure monitoring D.
- Liner Disposition
  - Disposal Storage
- F. Soil Disposition
  - Disposal
  - Storage

#### Notes:

The (#) indicate the preliminary scenarios from Table 3-5.

The cover alternatives 1-4 are described in Section 3.3.2.12

# **OU-4 Solar Evaporation Pond**

#### **IM/IRA Decision Document**

# **Executive Summary**

P	٩R	T	I I	NT	RC	D	U	C.	П	OÌ	V
---	----	---	-----	----	----	---	---	----	---	----	---

I.1	IM/IRA	A Objective	and Purpose								
1.2	Site Hi	story and O	U4 Background								
1.3	IM/IRA	Scope and	Assumptions								
I.4	Site Ch	aracteristics	and Environmental Setting								
	I.4.1	Engineered	Features and Structures								
	I.4.2	Demograph	ny and Land Use								
	I.4.3		y and Geomorphology								
	I.4.4		gy, Climatology, and Air Quality								
	I.4.5	, 5,									
	I.4.6	4.6 Site and Local Soils									
	I.4.7	I.4.7 Regional and Local Geology									
	1.4.8	.4.8 Site and Local Hydrogeology									
	I.4.9	4.9 Site and Local Ecology									
	I.4.10	I.4.10 Site and Local Cultural Resources									
PART I	I RCRA	FACILITY	INVESTIGATION/REMEDIAL SETTING								
	II.1.	OU 4 Field	d Investigations								
		II.1.1	Site Investigations Objectives, and Overview								
		II.1.2	Summary of Procedural Guidance and Standards Document								
		II.1.3	Ponds Investigation								
		II.1.4	Surficial Soils Investigation								
		II.1.5	Vadose Zone Investigation								
		II.1.6	Geologic Investigation								
		II.1.7	Field Investigation Quality Assurance/Quality Control								

Results of the RFI/RI Investigation

Surficial Soil Results

Geologic Investigation

1

Results of Ponds Characterization

Vadose Zone Investigation Results

Quality Assurance/Quality Control

**II.2** 

II.2.1 II.2.2

II.2.3

II.2.4

II.2.5

и.3	Nature and Extent of Contam II.3.1 Comparative Guid II.3.2 Solar Evaporation II.3.3 Surficial Soils II.3.4 Vadose Zone II.3.5 Bedrock	elines for Contaminant Characterization
II.4	Contaminant Fate and Transp II.4.1 Conceptual Mode	
	II.4.2 Contaminant Beha	vior and Mobility esses and Preferential Pathways
II.5	Summary and Conclusions of Investigation/Remedial Invest	<del>-</del>
	II.5.1 Summary II.5.2 Conclusions	
PART III	INTERIM MEASURE/INTE ANALYSIS	RIM REMEDIAL ACTION DECISION
III.1	Remedial Action Objectives	
III.2	III.2.3 Identification and III.2.4 Screening Alterna	al Technologies plicable Technologies Description of Alternative Scenarios
Ш.3		oment Contaminants/Areas of Concern Alternatives for Detailed Analysis
III.4	Risk Analysis III.4.1 Pathways of Expo III.4.2 Toxicity Assessm III.4.3 Development of I III.4.4 Results of Risk A	ent Remediation Goals
III.5	III.5.2 Compliance with	of Human Health and the Environment

AHachments SP307-111193:01 Mgz 3044

PART IV	III.5.4 III.5.5 III.5.6 III.5.7 III.5.8 III.5.9	Reduction of Toxicity, Mobility or Volume through Treatment Short-Term Effectiveness Implementability Cost Regulatory Agency Acceptance Community Acceptance TENDED IM/IRA ALTERNATIVE
PARI IV	RECOMM	ENDED IM/IRA ALIERNATIVE
	IV.1	Description and Rationale for Selection
	IV.2	Conceptual Design IV.2.1 Engineering Design IV.2.2 Implementation Plan and Proposed Schedule IV.2.3 Preliminary Cost Estimate
	IV.3	<ul> <li>IM/IRA Risk Analysis and Potential Impact Determination</li> <li>IV.3.1 Human Health Risks</li> <li>IV.3.2 Ecological Risks</li> <li>IV.3.3 Impact to Air Quality</li> <li>IV.3.4 Impact to Water Quality</li> <li>IV.3.5 Impact from the Commitment of Irreversible and Irretrievable Resources</li> <li>IV.3.6 Transportation Impacts</li> <li>IV.3.7 Short Term vs. Long Term Impacts</li> <li>IV.3.8 Impact to Cultural/Historical and Archeological Resources</li> <li>IV.3.9 Cumulative Impacts</li> </ul>
	IV.4	Comparative Analysis between the No-Action and Preferred Alternative
	IV.5	Consistency with Final Remedies
	IV.6	Permit Information Summary
PART V	POST CLO V.1 V.2	OSURE CARE MONITORING AND MAINTENANCE Performance Monitoring and Assessment of the Closure Post Closure Care and Monitoring

AHAChment 3 SP3C7:111193:01 Page 454

### PART VI OPERABLE UNIT 4 RFI/RI WORK PLAN

VI.1 Data Evaluation
VI.1.1 Evaluation of Historical Hydrogeological Data
VI.1.2 Evaluation of the Effectiveness of the ITS System

VI.2 Data Quality Objectives

VI.3 Field Sampling Plan

VI.4 Baseline Risk Assessment Work Plan
VI.4.1 Human Health Risk Assessment
VI.4.2 Environmental Evaluation

VI.5 Quality Assurance/Quality Control

Appendix A Analytical Data Applicable or Relevant and Appropriate Requirements Appendix B Identification of Contaminants/Areas of Concern Appendix C Appendix D Toxicological Profiles for Contaminants of Concern Appendix E Risk Analysis Calculations and other Comparison Criteria Appendix F Design Drawings Appendix G Outline Specification Cost Estimate Details Appendix H Appendix I IM/IRA Responsiveness Summary

References

RFI/RI Documentation and Pertinent Correspondence

List of Agencies and persons contacted

mester

Table 1 - Proposed Location and Action Specific ARARs/TBCs Identified for the OU4 IM/IRA

			IM/IRA	IM/IRA ALTERNATIVES	TIVES 1	
ARAR/TBC CITATION	REQUIREMENT DESCRIPTION	1	2	3	4	5
10 CFR 61.7, 61.44 and 61.52	NRC Closure Requirements for Low-Level Radioactive Waste Disposal Sites <sup>2</sup>		R&A	R&A	R&A	
10 CFR 834	DOE Radiation Protection Requirements for Public Health and the Environment <sup>3</sup>	А	Ą	Ą	А	А
10 CFR 1022	Evaluate Federal Projects for Potential Floodplain and Wetland Impacts 4	А	Y	Ą	А	А
29 CFR 1910, Subpart Z	Worker Protection Requirements for Hazardous Waste/Remediation Operations <sup>5</sup>		¥	Y	А	A
36 CFR 65 and 800 National Historical Preservation Act [16 USC 470] CRS 20-80-401	Historic and Archeological Preservation <sup>6</sup>	A	A	A	A	A
40 CFR 50.6 and 50.7	NAAQS, Particulate Matter 7	A	Y	Y	Y	А
40 CFR 61, Subpart H	NESHAPS, Radionuclide Emissions 7		Y	Y	A	А
40 CFR 122.26	NPDES Stormwater Management Requirements	A	Y	Y	A	А
40 CFR 262.12 6 CCR 1007-3, 262.12	Hazardous Waste Determinations				А	А
40 CFR 262, Subparts B and C; 40 CFR 263, Subpart B 6 CCR 1007-3, 262, Subparts B and C; 6 CCR 1007-3, 263, Subpart B	Off-Site Transport of Hazardous Waste 8		-		Y	А
40 CFR 262, Subpart D 6 CCR 1007-3, 262, Subpart D	Generator Record Keeping and Reporting 9		-		A	A
40 CFR 264, Subpart B 6 CCR 1007-3, 264, Subpart B	General Standards for Hazardous Waste Facilities 10	-	1		A	A
				つ 下 へ	すいのでものりする	1. 1

AHachment 4 523c7:111193:01

			IM/IRA	IM/IRA ALTERNATIVES	ALTERNATIVES 1	
ARAR/TBC CITATION	REQUIREMENT DESCRIPTION	1	2	3	4	5
40 CFR 264, Subpart D 6 CCR 1007-3, 264, Subpart D	Preparedness and Prevention for Hazardous Waste Facilities <sup>10</sup>	1	1	+	А	A
40 CFR 264, Subpart F 6 CCR 1007-3, 264, Subpart F	Groundwater Protection and Monitoring 11		А	А	А	
40 CFR 264, Subpart I 6 CCR 1007-3, 264, Subpart I	Requirements for Container Management and Storage	1			A	А
40 CFR 264, Subpart J 6 CCR 1007-3, 264, Subpart J	Requirements for the Treatment and/or Storage of Hazardous Waste in Tanks 12	-	-		A	А
40 CFR 264.552 and 264.553	Establishment of CAMUs and Temporary Units to Facilitate Corrective Actions 13	-	R&A	R&A	R&A	R&A
40 CFR 265, Subpart B 6 CCR 1007-3, 265, Subpart B	General Standards for Interim Status Hazardous Waste Facilities 14	А	Α	А	Ą	A
40 CFR 265.111 6 CCR 1007-3, 265.111	Interim Status Facility Closure Standards	A	A	A	A	A
40 CFR 265.113 6 CCR 1007-3, 265.113	Time allowed for Closure	A	A	А	A	А
40 CFR 265.114 6 CCR 1007-3, 265.114	Disposal or Decontamination of Equipment Structures and Soils	-	А	А	А	А
40 CFR 265.115 and .116 6 CCR 1007-3, 265.115 and .116	Certification of Closure and Survey Plat	-	A	А	А	
40 CFR 268,117 to .120 6 CCR 1007-3, 263,117 to .120	Post-Closure and Use of Property	-	А	A	А	!
40 CFR 265.228 <sup>-</sup> <sup>-</sup> <sup>-</sup> 4 6 CCR 1007-3, 265.228	Closure and Post-Closure Care for an Interim Status Surface Impoundment	А	A	A	Ą	А
40 CFR 268, Subpart A to D 6 CCR 1007-3, 268, Subpart A to D	Land Disposal Restrictions and Treatment Standards 15	_	-	1	А	А
40 CFR 268, Subpart E 6 CCR 1007-3, 268, Subpart E	Prohibition on Storage of Restricted Waste	1	-		A	A

7

94a.eliment 4 503C7-111193:01 Rige 2065

			IM/IRA	IM/IRA ALTERNATIVES 1	TIVES 1	
ARAR/TBC CITATION	REQUIREMENT DESCRIPTION	1	2	3	4	S
40 CFR 300.440 [Reserved] CFRCLA (21(d)(3)	Procedures for Planning and Implementing Off-site Response Actions 8	1	1	1	V	A
49 CFR 172, Parts B to F; 49 CFR 173, Parts B to O;	Off-Site Transport of Hazardous Waste 8	!	l	-	¥	¥.
50 CFR 402 16 USC 1531 - Endangered Species Act	Evaluate Federal Projects for Potential Impact to Endangered or Threatened Species or Critical Habitats	A	Y	Α	4	∢
DOE Order 5480.11, Section 9	Occupational Radiation Protection Standards 16	TBC	TBC	TBC	TBC	TBC
DOE Order 5400.5, Chapter IV	Residual Radioactive Material in Soil	TBC	TBC	TBC	TBC	TBC
DOE Order 5480.3	Packaging and Transportation Requirements for Radioactive Materials 8	-	!	1	TBC	TBC
DOE Order 5483.1A	Occupational Heath Standards for General Construction Activities 17	TBC	TBC	TBC	TBC	TBC.
DOF Order 5820 2A Chapter III	Low-Level Radioactive Waste Management		TBC	TBC	TBC	TBC
Evenitive Order 11988	Floodplain Management - Federal Facilities	TBC	TBC	TBC	TBC	TBC
Executive Order 11990	Protection of Wetlands - Federal Facilities	TBC	TBC	TBC	TBC	TBC
NRC Regulatory Guide 1.86	Residual Radioactive Material as Surface Contamination	TBC	TBC	TBC	TBC	TBC
Time Megalater) carac						

ä

The IM/IRA Remedial Alternatives are as follows:

1 - No Further Action
2 - Containment of Contaminated Materials without Treatment
3 - Containment of Liners with In-situ Soil Treatment
4 - Removal of Contaminated Liners (Partial or Total)
5 - Removal of Contaminated Materials (Partial or Total)

These regulatory requirements would be Relevant and Appropriate if radiological contamination exists. Only those standards which relate to closure activities would be included. 5

- This regulation was recently promulgated by the DOE to control radiation exposures for the protection of public health and the environment. NRC also has similar protection standards promulgated under 10 CFR 20.1301. Since the DOE standards are applicable and are consistent with the NRC, which would be relevant and appropriate, the DOE standards is the only ARAR identified for compliance purposes. . س
- Although no wetlands are expected to be impacted, all Federal actions are required to be assessed. 4.
- Although OSHA standards are not considered ARARS (see 55 FR 8680), 40 CFR 300.150 specifically requires that all response actions under the NCP to maintain worker safety and health as specified under 29 CFR 1910.120. This regulation is being listed for completeness and to ensure that these protection requirements are not overlooked when preparing the implementation plans for the selected IM/IRA alternative. 'n
- Although no historic and archeological sites are expected to be impacted, all Federal actions are required to be assessed. ė.
- This standard would involved the control of fugitive particulates during regrading and/or excavation .
- These requirements would only be applicable in the case where hazardous waste is shipped off-site. တဲ
- Recording keeping requirements are not normally considered to be ARARs since they are not a substantive requirements. However, off-site actions response actions must comply with all applicable regulations both substantive and procedural. The generator record keeping and reporting requirements would only be applicable in the case where hazardous waste is shipped off-site.

o,

- These requirements would only be applicable should a new hazardous waste storage or treatment facility be constructed as part of the IM/IRA alternative. These requirements would address the operation of the storage and treatment facility only. Should waste materials be stored or treated within existing on-site facilities, the management and control of the waste is outside the scope of this IM/IRA and would be the responsibility of the storage/treatment facility custodian. 10.
- Post-closure groundwater monitoring is required for a "dirty" closed surface impoundment unless the owner/operator can demonstrate that groundwater monitoring is not necessary. The groundwater monitoring requirements will be addressed in the Post-Closure Permit. 11.
- These requirements would only be applicable if hazardous waste is to be stored or treated in a tank. 12.

13.

Temporary Units (TUs) to promote more expeditious clean-ups at many sites. In States where the EPA administers the RCRA program, the Regional Administrator may designate a CAMU or TU for remediation waste to allow a more flexible management of these waste to be protective of human health and the environment. CAMUS/TUS allow the consolidation, storage, and treatment of remediation waste without having to fully comply with LDR treatment standards, minimum technology requirements or permitting aspects if compliance On February 16, 1993, the EPA promulgated final rules for Corrective Action Management Units (CAMUs) and with these standards could result in an ineffective remediation program. Authorized States are required to adopt the CAMU/TU rule as part of the State hazardous waste management program; however, strongly encourages that States adopt these final rules. Currently, the State of Colorado has

9400 fewers 4 50307 1111193:01 page 50065

- are promulgated and become effective, the Parties agree to amend the Statement of Work as necessary to incorporate such regulatory requirements. Prior to such amendment, should any activity at an OU identified as a State lead reach the corrective action stage, DOE and the State will utilize the CERCLA remedial action process." It should be noted that the CERCLA remedial process is based on a similar CAMU/TU concept which allows the establishment of Areas of Contamination and exempts on-site response actions from needing to obtain permits for activities associated with the management of remediation waste. The provisions for a CAMU/TU would allow be required if the IM/IRA alternative involves the consolidation of contaminated media (if designated as a hazardous waste) to improve containment design, adopted the CAMU/TU rule; however. Paragraph 19 of the IAG states, "When Corrective Action regulations and/or for the on-site treatment or storage of the remediation waste (if designated as a hazardous
- Interim status operational requirements apply to hazardous waste facilities until they are certified as being closed. Security, training and inspection programs will need to be maintained and revised, if necessary, to ensure that public health and the environment are adequately protected during the closure 14.
- In addition to complying with the required treatment standards for the land disposal of any designated hazardous waste, off-site shipments will need to be certified as required. 15.
- Although occupational worker standards are not consider to be ARARs/TBCs, the citation to the DOE Radiation Protection Program is being provided for completeness and to ensure that these protection requirements are not overlooked when preparing the implementation plans for the selected IM/IRA alternative. 16.
- Although OSHA standards are not considered ARARS (see 55 FR 8680), such non-environmental OSHA requirements would apply on their own applicability. These OSHA standards apply to Federal facilities by Executive Order ??; however, they are not independently enforced by OSHA. These occupational safety requirements are adopted and implemented under DOE Order 5483.1A. This regulation is being listed for completeness and to ensure that these protection requirements are not overlooked when preparing the implementation plans for the selected IM/IRA alternative.

17.

NOV   DEC   JAW   FEB   HAR   APS   HAR   JUN   JUL   AUG			- · · · · · · · · · · · · · · · · · · ·	Pevision Checked Eproved
1993 OCT NOVIDEC JAN FEB HAR JAPR HAY JUN JUL JAUG ISEP OCT MOVIDEC RCRA FACTLITY INVESTIGATION	REMEDIAL INVESTIGATION REPORT	[	DIRECT PROJECT SUPPORT	FLATS Seei 2 of 14
SIART EARLY ORIG REH TOTL START FINISH DUR DUR FLT R	1840V93 15HAR94 76 76 37 75EP93A 10HAR94 106 67 40	20FEB93A 7FEB94 239 54 1     7FEB94 0 0 1     20FEB93A 22M0V93 187 4 48     10EC93 28JAN94 37 37 7     130EC93 7FEB94 35 35 1     5JUL93A 4FEB94 76 53 2     5JUL93A 4FEB94 157 157 28	10C1930 70C194 249 224 169 10C1930 70C194 249 224 169	EGRG ROCKY FLATS OPERABLE UNIT #04 SOLAR PONDS REMEDIATION
ACTIVITY DESCRIPTION	2028 NORTH CYALIDATION) VADOSE ZONE SAMPLING (VALIDATION)	DATA EVALUATION PHASE I RETARI REPORT COMPLETE EXECUTED VERTICAL DRILLING (EVAL) 2078 NORTH (EVAL) VADOSE ZONE SAMPLING (EVAL) INCORPORATE IN/TRA REVIEW COMENTS	PROGRAM, PROJECT HWINGEHENT SUPPORT  9A/0C  9A/0C	\$80093
ACTIVITY 10	40132300	40141000 40141009 40141200 40141300 40141300 40141200	40151000	Target Date SN0V93 Plot Date 12M0V93 Data Date 12M0V93 Project State 1 10EG9 Project Finish 15JUN9S IC1 Prisavera Systems, Inc

ACTIVITY 10	ACIIVIIY DESCRIPTION	EARLY START	EARLY FINISH	ORIG	REM 1011. Dur flt	1993 1997   100
					ŗ	
40211000	REQUEST FOR PROPOSAL (BASELINE)	21 JUN93A	1,301,934	10	0	
40212000	PROPOSAL (BASELINE)	1,301,939	19906939	35	0	
40213000	TECH EVAL (BASELINE)	20006434	11001430	35	0	
40214000	COST EVAL (BASELINE)	220CT43A	SNDV93A	9	0	
40215000	LETTER CONTRACT (BASELINE)	23406434		0	0	
40216000	NEGOTIATIONS (BASELINE)	12NDV93	23N0V93	8	8 0	<b>-</b>  -
40217000	ANARD (BASELINE)	2480893	905093	10	10 0	o ‡
						MODIFICATIONS TO BASELINE SUB-CONTRACTING
40221000	REQUEST FOR PROPOSAL (MOD)	• INDV93A	9N0V93A	7	0	
40221100	SOW PKG (MOD)	немен	өкрүчэл	0	0	
40221200	PROCUPEMENT INCLUSIONS (MOD)	BNDV93A	9NDV93A	S	0	
4022200	PROPOSAL (MOD)	9RDV93A	1940493	10	6 7	2
40223000	TECH EVAL (MOD)	SZNDV93	705.043	0	10	7 0
40223100	DIRECTIVE CHANGE	100EC93		0	0	•
40224000	COST EVAL (1900)	10EC43	1405093	9	10 34	
10225000	NEGOTIATIONS (MOD)	150EC93	12JAN94	5	15 34	
40226000	ANDRD (HOD)	13,0004	26 JAN94	9	10 34	
						SELECTED ALTERNATIVES
40231000	RISK ANALYSIS	жиручза	LPNONGI	0	-	9
40232000	PRELIMINARY REMEDIATION COALS	13001434	1740493	15	-	99
40233000	\$. 303	23406434	12NOV93	2	1 17	
40234000	OPTIONS ANALYSIS	• 23AUG43A	160EC93	18	R	
40234100	TECHNOLOGY LITERATURE RESEACH	23006930	1001434	8.	0	
40234200	OPTIONS DEVELOPMENT & MARLYSIS	6001939	905043	9	=	
40234300	SELECTION OF ALTERNATIVE	100EC43	160EC93	S	5	2
larget Date SNOV93 Plot Date 12NOV93 Data Date 12NOV93 Project Start 1DECR2 Project Finish 15JUN95	SABVA3  [2M0V43 [2M0V4			9 0 8 0 0 0 0 0 0	EG&G ROCKY FLATS OPERABLE UNIT #04 AR PONDS REMEDIAT	EGRG ROCKY FLATS  OPERABLE UNIT #04  SOLAR PONDS REMEDIATION
(c) Primavera Systems,	iystens, Inc.					

ברסמות נותו	START FINISH	DUR	DUR		DEC JAN FEBINA	OCT (NOY DEC) JAN FEB IMAR JAPA HAY JUN JUL JANG ISEP JOCT NOV JOEC JAN FEB HAR JARAHAY JUN JUL JANG THY ING IN INC. TANGEN JANG JANG JANG JANG JANG JANG JANG JAN	TAUG   SEP   001	NOV DEC JAN F	EB MAR AFR H	AY LJUN JJUL TAU
				SELECTED	ED ALTERNATIVES	IVES	***************************************	•••••	<b></b>	
EPA/COH REPEDIAL ALI CONCURRENCE	160EC93	0	0	9	• • ·				•	
LINER DISPOSITION LEGAL ANALYSIS	4ИВУЧЗА 160ЕСЧЗ	£	23	<b>U-1</b>	 П I		*********	*****	********	
OBIAIN DOE ENDORSEMENT TO DOE GENERAL COUNCIL	ANDVAJA 10NOVAJA	.c	0	m*1	••••		•••••	•••••	·····	
INITIALE AMALYSIS OF REGULATIONS	THOV93A 12NOV93	2	-	2				•••••		
ANALYZE REGULATIONS	15/10/43 70EC43	15	15	<u>]                                    </u>						
REVIEW DRAFT REPORT	BDEC93 90EC93	~	~	2			••••••	•		
FINAL REPORT	100EC93 160EC93	S	υ	32					••••••	•••••
ARAR DEVELOPHENT	23AUG93A 16NDV93	30	3	12	•••••				••••••	••••••
HODELING SUPPORT	100EC93 11FEB94	<del>Q</del>	0+	~				•••••	••••••	•••••
DOE RESOLUTION OF LINER DISPOSITION	5001934 705093	35	16		п					
				IM/IR	RA DO COMPONENTS	ENTS				
PHASE I RFI/RI REPORT	7FEB94	0	0		۰.		•••••		•••••	
PHASE II RFI/RI WORK PLAN	3/1894	0	0	-	۰ ،					
CONCEPTUAL DESIGN COMPLETE	25.19894	0	0	=	۰ • ·					·····
POST CLOSURE PLAN	9FEB91	0	0	0	•					
IN/IRA EA REPORT	100EC43 8FEB44	37	37	0					<u></u>	
IH/IRA EA REPORT COMPILATION	9FEB94 15FEB94	v	25	0	-					
							•••••	*********		
ACTION DECRIPTION MEMORANDUM	200CT43A 12N0V43	<u>e</u>	-	34				•••••		
PREPARE (ADH)	20001439 24001434	10	0		~			*******	•••••	•••••
DOEZEGG REVIEW (ADM)	INDV93A 12NDV93	10	-	39	г		•••••	·•••••	******	
ENVIRONMENTAL CHECKLIST	ISHBV93 70EC93	15	15	34					•••••	••••••
PREPIARE (EC)	15x10v93 19N0v93	v	S	34						
EGG/HEPA COMMITTEE REVIEW (EC.)	22HDV93 7DEC93	10	01	34	 		••••••			
	10JAN95 6HAR95	9	40	71			••••••••	<u> </u>	 ]	
Chiling Activity Bates Out for the forty Pates for the forty for the forty for the forty for the forty			EG&G ROCI OPERABLE	EC&G ROCKY FLATS OPERABLE UNIT #04	NO 1	- Tag	Date	Revision		Dacked Fewored

1993 OCT INOV IDEC JAN FEBINAA JAPRIHAY JUUN JUUL JANG SEP JOCT NOV IDEC JAN FEBINAR JAPRIJUN JUU JAUG			01	01	•																		71				bate Revision Checked (reproved	
1993 CI INDY IDEC JAN FEBTHAR IAPR HAY JUN JUUL IAUG	IN/IRA NEPA					IM/IRA DO REVIEWS	ם ו		<b>*</b> •		<b>=</b> '	1	[].	<b>1</b>		]-  <del>-</del>	_ I <sup>[</sup>				> -	]-				• •	KY FLAIS UNIT #04 REMEDIATION	
EARLY ORIG REM 101L FINISH DUR DUR FLT DO	11	23JANYS 10 10 71	20FEB95 20 20 71	6MAR95 10 10 71	6MAR95 0 0 71		15HAR94 20 20 0	22FEB94 5 5 0	0 0 0	1MAR94 5 5 0	BMAR94 5 5 0	15MAR94 5 5 0	4MaY94 35 35 2	22MAR94 5 5 0	0 0 0	6APR94 10 10 2	20APR94 10 10 2	4HAY94 10 10 2	12301.94 47 47 18	11119191 5 5 2	0 0 5	12,00194 42 42 18	215EP94 50 50 28	2AUG94 15 15 18	900694 5 5 18	81 0 0 18	EGRG ROCKY FLATS  OPERABLE UNIT #04  SOLAR PONDS REMEDIAL	
ACTIVITY DESCRIPTION START		PREPARE (FONS) 10JANYS	DOE/EGG REVIEW (FONST)	COMMENT RESOLUTION (FONS))	ISBUE FOWSI		ROUND TABLE (PH 1 DRAFT)	TRANSHITTAL (PH 1 DRAFT RT)	TRANSHITIAL (PH   DRAFT RT) 235E894	REVIEW & COMMENT (PH   DRAFT RI) 23FEB91	CONFENT RESOLUTION (PH 1 DRAFT RT)	INCORPORATE CONFENIS (PH I DRAFT RT)	REVIEW CYCLE (PH   DRAFT)	IRANSHITAL (PH I DRAFT REVIEW)	IRANSHITIAL (PH. I. DRAFT REVIEW) (146, 11) 23HAR94	REVIEW & COMMENT PERIOD (PH I DRAFT REVIEW) 23HAR94	COMENT RESOLUTION (PH I DRAFT REVIEW) 7APR94	INCORPORATE COMENTS (PM I DRAFT REVIEW) 21APR94	PHASE I PROFOSED DO . SMAT94	TRANSHITTAL (PH 1 PROPOSED REVIEW)	TRANSHITTAL (PH I REVIEW) (1966-12) 12HAY94	PUBLIC COMENT PERIOD (PH I REVIEW)	ORALT RESPONSIVENESS SUMMARY	REPORT PREPARATION (DRAFT RESP SUM) 13JUL94	TRANSHITTAL (DRAFT RESP SUMM REVIEW) 300094	TRANSHITTAL (DRAFT RESP SUMM REVIEW) (1AG 13) 10AUG94	Activity Bar (any bates Collection)  Collical Activity Propess Bar Propess Bar Propess Bar Negal Dates  \$\infty\$ // P Riletore/ing Activity	Inc.
ACTIVITY ID DESCR		40254100 PREP	40254200 DDE/	40254300 CONM	40254400 1550		40261100 R0UND	40261110 TRAN	40261119 TRAN	40261120 REVI	40261130 COM	40261140 INCC	40261200 REVIE	40261210 TRAN	40261219 TRAN	40261220 REV	40261230 COM	40261240 11100	40262000 PHRS	40262110 TRAI	40262119 TRA	40262150 PUB	40263000 DRAF	40263100 REP	40263210 TRA	40263219 TRA	larget Date SWDV43 Plot Date 12MDV43 Data Date 12MDV43 Project Start 10EC92 Project Finish 15JUN95	ici Primavera Systems, Inc

1995 DCT NOV DEC JAN FEBINAR PARMAY JUN JUL POUG					<u> </u>			D.1.	•••	٥.						Revision Checked Approved
I AUG SEP OCT		I	<u> </u>	ו ם	U.,	<b>-</b> '	<b>~</b>									Date Date
OCT NOV DEC JAN FEB HAR APR HAY JUN JUL	IM/IRA DO REVIEWS										DIRECT PROJECT SUPPORT					Table NO.
<u>===</u>		88	28	28	Ξ	88	88	79	19	Ξ		99	3	6	30	
E SE		2	9	0	22	5	0	2	0	0		282	283		282	EGRG ROCI OPERABLE
25 E		10	0	2	20	2	0	Ŋ	0	0		380	ac	OS .	380	5
ENELY FINISH		2390694	75EP94	215EP94	9JAN95	16d358Z		9.JAN95	9 JANYS	9.191195		9.191195	O LOHOS	CENT	9.191195	
EARLY START		-69	AUG94	85£P94	SEP94	225EP94	295£Р94	3JAN95				21 JUN93A	001001	100.134	10CT43A	
ACTIVITY DESCRIPTION		REVIEW & COMMENT PERIOD (DRAFT RESP SUMM RVV) 1000	COMENT RESOLUTION LORGET RESP SUM REVIEW) 24AU	INCORPORATE CONTENTS (DRAFT RESP SUMM REVIEW) 85	FINAL INJER DD & RESPONSIVENESS SUFFIARY . 22SE	TRANSHITTAL (FINAL DD & RESP SUMH RVV) 225	TRANSHITTAL (FINAL DD & RESP SUNH RVV X LAG 14) 299	EPAZCOH APPROVAL (FINAL DO & RESP SUMM RVM)	EPAZCOH APPROVAL (FINAL DO & RESP SUMM RVM)	PUBLIC REPOING		PROGRAH/PROJECT HYNAGENENT			REGULATORY SUPPORT	SMUV43
OCTIVITY 1D		40263220	40263230	40263240	40264000	40264110	40264119	40264140	40264149	40264200		40271000	40272000	1007/201	40273000	Target Date SNDV93 Plot Date 12MDV93 Project Start 10EC92 Project Start 10EC95

1975 FEB MAR MAY JUN JUL MUG					Checred Approved
<u>jul  aug  sep  oct  nov  dec  jan</u>					7 of 11 Date Revision
1993 OCT NOV DEC JAN FEBHAR APR HAY JUN JUL ANG SEP OCT NOV DEC JAN FEBHAR APR HAY JUN JUL ANG CONCEPTUAL DESIGN	TOWARE TOWARD TOWARD TO THE TOWARD TO THE TOWARD TO THE TOWARD TOWARD TO THE TOWARD TOWARD TO THE TOWARD TO THE TOWARD TO	01010	DIRECT PROJECT SUPPORT	]-[-[]-[	YY FLATS URIT #04 PEMEDIATION
ORIG REH 101L DUR DUR FLI	26 26 11	10	01 01	24 24 13	EG&G ROCKY FLATS OPERABLE UNIT #04 SOLAR PONDS REHEDIAT
EARLY EARLY START FIRISH	* 170EC93 24JAN94	<b>3 3</b>	11)Hride CeJride	170EC93 20JAN94	
ACTIVITY DESCRIPTION	CONCEPTUAL DESIGN 408	40 K SPECIFICATIONS 40K SCHEDULE	40% CUSI ESTITATE	CD PROCRAH/PROJECT MANACEMENT SUPPORT CD PROJECT ENGINEER	SADVA3 [2004] [2
ACTIVITY 10	40311000	40312000	10311000	40331000	Target Date SW0V43 Plot Date TR0V43 Data Date TR0V43 Project Start 10EC42 Project Finish ISJUN48

	State Carrie	חחא החו	N DEC JAN FEB MAR APRIMAY JUN JUL	AUG ISEP 10CT INOV IDEC JAN FEBINAR APRIMAY JUN JUL INUG
			60%   111LE 11 DESIGN	
KEY DECISIONS 11 & 2	23HAR94 29HAR94	5 5 0		
60% TITLE 11 DESIGN	• 30HAR94 23AU694	102 102 22		
	30NAR94 3JUN94	46 46 0		
60% SPECIFICATIONS	30NAR94 3JUN94	16 16 0		
60% SCHEDULE	271/8894 15JUN94	13 13 0	01	
60% COST ESTIMATE	31HAY94 27JUN94	20 20 0		
60% TRANSHITAL	28JUN94 5JUL94	5 5 25		
608 TRANSHITAL LITTLE 11)	6JUL94	0 0 25	<	
60% REVIEW & COMPENT	6,0194 26,0194	15 15 22		
60% COMMENT RESOLUTION	27JUL94 90U694	10 10 22	o 1	
60% INCORPORATE COMMENTS	1090694 2380694	10 10 22		
			90% IIILE II DESIGN	
40¢ TITLE 11 DESIGN	• 28JUR94 11NDV94	97 97 0		
90K DRAWINGS	28JUN94 15EP94	47 47 0		
40% SPECIFICATIONS	28JUN94 15EP94	47 47 0		
40% SCHEDULE	26AUG94 83EP94	0 6 6		
40% COST ESTIMATE	26AUG91 235EP94	<b>20</b> 20 0		п
90% IRANSHIITAL	265EP94 305EP94	5 5 0		
90% TRANSMITTAL (TITLE 11)	300.194	0 0 0		• • •
908 REVIEW & COMPENT	300194 1400194	<b>10</b> 10 0		n 1
90% COMMENT RESOLUTION	1700194 2800194	10 10 0		
90% INCORPORATE COMMENTS	310CT94 11NDV94	10 10 0		n 1
	mage of the state		TITIE II REVIEW CYCLE	
TITLE II IMPLEMENTATION	. 14HDV94 28FEB95	64 69 20		
IRANSHITTAL (TITLE 11)	14N0V94 18N0V94	5 5 0		
Activity for (ort) bates (citical plates (citical forting) for (citical forting) for the forting for the forting forting (citical forting) forting for	· ·	EGGG ROCKY FLATS  OPERABLE UNIT #04	3. Journal of 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	Date Pevision Checked Approved

<del></del>		····
JUL [AUG		Pancost
1978   FEB   MAR   APR   MAR   JUN		Drecked Checked
1945 HR APR HR		
N FEB		8
DEC JA		Revision
OCT NOV		
16 SEP		Date O
100		70 -
E E		186
HAR IAPR IN	SUPPORT	
JAN FEBINGRIAPRINAY JUNINUGISEP DOCT INDV IDEC DESTGN REVIEW CYCLE	PR0JEC1	
1 1		
OCT NOV	DIRECT	FLA15
	2 25 25 25 25 25	EGEG ROCKY FLATS  OPERABLE UNIT #04
SUS SUS	0 1 10 10 10 10 10 10 10 10 10 10 10 10	EGRG 1
DUR N	0 10 10 10 10 10 10 10 10 10 10 10 10 10	
FINISH	130EC94 1181AN95 281E895 25JAN95 25JAN95	
I		
START	21NDV94 23MAR94 23MAR94 23MAR94 23MAR94	
	(51-5)	Dark.
	NY ) ( 10	Activity Brifary bates Critical Activity Breeds British Frogram British
	I DOCCINE	Ily Br fer for Sec. 64 for the form of the
	SEPENT   1711E 173	\$3.25   0001
	THE IT INDICEMENT OF THE IT IS A STATE OF THE IT IS	
PTION	REVIEW & COMMENT CITICE ITS  CONNENT RESOLUTION CITICE ITS  INCORPORATE CONFENTS (TITLE IT)  APPROVAL CITICE ITS  PROJECT ENGINEER  PROJECT ENGINEER	
DESCRIPTION	TRANSHITTAL (THE REVIEW & COMMEN INCORPORATE COM APPROVAL (TITLE PROJECT ENGINEER	SH0V93 12H0V93 15H0V93 15J0W93
1		larget bate Sk0v43 Prot bate 12k0v43 bata bate 12k0v43 Project Siært 10EC92 Project Finish 15k0v43
ACTIVITY 10	40442000 40443000 40445000 40462000 40462000	laget [Plot Dail

1995 APR HAY JUN JUL AUG		П і		<b>,</b>																0 1			ום	<·			(hecked Approved
PJOCT NOV DEC JAN FEB MAR														ום	0.1	ן ם	ום										Date Revision
1993 OCT NOV DEC JAN FEBIHAA APPRIMAT JUNI JUL ANG ISEP IOCT INOV DEC JAN FEBIHAR APPRIMAT	TION JRK CONTROL PACKAGE	·····						SUBCONTRACT				 	<b>D</b>								TION ACTIVITIES		******		<u> </u>		9 reet 10 of 14
1993 OCT NOV DEC JAN FI	PRE-CONSTRUCTION INTEGRATED WORK CONTROL							PROCURE SUBCO		D 1											PRE-CONSTRUCTION				<u>                                     </u>		FLATS IT #04 MEDIATION
REM 1011. Dur Flt		42 28	30 40	<b>5</b>	30 40	45 0	30 12		91 15	10 179	5 195	21 179	5 195	21 0	0 01	15 0	15 0	21 0	5 0	5 0		21 5	21 5	0 0	60 258		EGEG ROCKY FLATS OPERABLE UNIT #04 SOLAR PONDS REMEDIATION
ORIG DUR		2	99	S	8	2	8		3	02	5	15	S	21	10	15	15	12	5	5		12	75	0	09		6 0 S0LA
EARLY FINISH		28APR95	11APR95	15,01495	110PR95	BJUN95	22MAY95		BMAR94	7FEB94	14FEB94	BMAR94	14FE894	210EC94	12 JAN95	2/1895	23/1895	24HAR95	31149895	7APR95		9HAY95	BJUN95		40PR94		
EARLY START		IMAR95	1MAR95	PAJUNAS	1 MAR95	109PR95	10APR95		- 25,01194	25,101194	. 8FE894	BF [ B94	BFE894	21110194	220504	13JAN95	3FE845	24FEB95	27MAR95	3APR95		10APR95	1049795	16,00495	10JAN94		
ACTIVITY DESCRIPTION		WASTE DISPOSAL PLAN	EXCAVATION PERMIT	INCP ROUNDTABLE	SECURITY PLAN	SITE SPECIFIC H & S PLAN	JOB SAFETY ANALYSIS		REQUEST FOR PROPOSAL	BID PACKAGE	DAVIS BACON	SHORT LIST OF BIDDERS	KEY DECISION 13	PROPOSAL	DOE HO PROCUREMENT COORDINATION	TECHNICAL EVALUATION	COST EVALUATION	NEGOTIATIONS	RECOMPENDATION TO DOE HO	DOE HO APPROVAL		TRAINING	MOBILIZATION	START CONSTRUCTION (IAG 16)	SAFETY ASSESSMENT DOCUNENT	·	\$0043 \$0043
ACTIVITY ID D	·	40521000	40522000	40523000	40524000	40525000	10526000		40531000 R	40531100	40531200	40531300	40531400	40532000 P	40533000 D	40534000	40535000	40536000 h	40537000 F	10538000		40541000	40542000	40543000	40544000		larget bate Skibyag Plot bate 12kibyag bata bate 12kibyag Project Start 10ECA2 Project Finish 15JUN4S

							puga 110	,	
JUL AUG								pavouddy	
1993   1985   1987   1989   1989   1989   1989   1989   1989   1989   1989   1989   1989   1989   1989   1989   1980   1980   1989   1989   1989   1989   1989   1989   1989   1989   1989   1989   1989   1989   1989   1989	0VERS11E							Seel 11 of 14  Date Revision Checked (typer	
	PRE-CONSTRUCTION BUILDING 788 D & D OVE	17.1	DIRECT PROJECT SUPPORT		5	2		EG&G ROCKY FLATS OPERABLE UNIT #04	SOLAR PONDS REMEDIATION
REN 1011. Dur Fl.T		219		388	388	388		EGRG ROC OPERABLE	AR PONDS
OR1G DUR		249		418	418	418			25   
EARLY FINISH		30SEP94		BJUN95	BJUNGS	BJUNAS			
EARLY START		1001938		1001939	1001938	10CT43A			
ACTIVITY DESCRIPTION		BUILDING 788 D & D OVERSITE		PROGRAM/PROJECT MARGENENT	04/05	PROJECT ENGINEER		SNOV93 [2NOV93	اح
ACTIVITY ID		40551000		40581000	40583000	40584000		Target Date SNDV93 Plot Date 12NDV93 Data Date 12NDV93 Project 5 Fact 1 DECQ2	IC) Primavera Systems, Inc

1945 NUG İSEP İQCT İNQV İDEC JAN İFEB İMAR İAPR İMAY JUUN JUUL (AUG																											12 of 14 Date Revision (Necked Sproved	
1993 OCT NOV DEC JAN FEBINAR JAPRINA JUN JANG ISEP OCT NOV DEC	PERFORMANCE MONITORING PROCURE SUBCONTRACT			<u> </u>	01	=-,	D-1-	۰.	IMZIRA TECHNICAL CONSULTATION		POST CLOSURE PERFORMANCE PLAN	<u> </u>	0	<u> </u>		0	• • 1	o ,	]   1	]   `	o ·		] <b> </b> .	<u> </u>	o • 1		FLATS 5-601	REMEDIATION
101L FLT				30	30	0	30	30		3 28		2	0	0	5	0	0 0	5	0	0	0 0	5 0	0 7	0 7	7 0	0 7	EG&G ROCKY FLATS	
6 REH DUR		30 0	0	10	10 10	5 5	15 15	0		13 313		5	20 20	10 10	20 20	15 15	0	2	19	=	0	27	30 30	20 20	0	10 10	EG&(	SOLAR PONDS
Y ORIG		.								15 313								*				*						5
EARLY FINISH		175EP93A	21001930	605030	1305043	CPVONBI	11 JAN94			281 [845		29NDV93	4 JAN94	18JAN94	15FE894	8FE894		15FEB94	22MAR94	15MAR4		22HnR9	48884	200PR94		44944		
EARLY START		1900693A	175EP93A	1940093	СРУДИОЕ	CPVONSI	140EC43	12JAN94		1940493		CPVOVAC	HETER JOHDV93	YSTEM SJAN94	0C . 19JAN94	SSMNT 19JAN94	SSHNT PFE894	SSHNT 9FE894	NI . 24FEB34	ESHNT 24FEB94	ISESITI IGNARA	ISESHN 16MAR94	NI . 23HAR94	ENT 23MAR94	SHENT 21APR94	SHENT 21APR94	Qu.t.	
ACTIVITY DESCRIPTION		REQUEST FOR PROPOSAL	PR0P0SAL	TECHNICAL EVALUATION	COST EVALUATION	LETTER CONTRACT	NEGOTIATIONS	AWARD	-	IN/IRR/00 TECHNICAL CONSULTATION		IDENTIFICATION OF PERFORMANCE CRITERIA	EVAL ALTERNATIVES TO HEASURE PERFRHICE PARAMETER	CONCEPTUAL DESIGN OF PERFRANCE MONTORING SYSTEM	INTERNAL PST CLSRE PRFRHNCE & ASSESSMENT DOC	PREP INTERNAL DR'T PST CLSR PREFRICE & ASSHNI	SUBHT INTRNAL DRFT PST CLSR PREFRINCE & ASSHINT	TRISH INTRIL DR'T PST CLSR PREFRHICE L ASSINIT	DRAFT PROPOSED PST CLSPE PERFHYCE ASSESSMENT	PREP DRIT PROPOSED PST CLSR PRFRINCE & ASESHINT	SUBHT DRFT PROPOSED PST CLSR PRFRMICE & ASESM	TRHSHT DEFT PROPOSED PST CLSR PRFINCE & ASESHI	PROPOSED POST CLUSURE PERFORMANCE ASSESSMENT	PREP PROPOSED PST CLSR PRFRINCE & ASSESSMENT	SUBNI PROPOSEO POST CLSR PRFRHNCE & ASSESSHENT	TRNSHI PROPUSED PST CLSR PRFRHNCE & ASSESSHENT	Activity Bryderly bates Critical Activity Properts Bry	, , , , , , , , , , , , , , , , , , ,
ACTIVITY ID		40611000	40612000	40613000	40614000	40615000	40616000	40617000		40620000		40631000	40632000	40633000	40634100	40634110	40634120	40634130	10634200	40634210	40634220	40634230	40634300	10634310	40634320	40634330	larget Date SKIV43 Ploi Date 12-NOV43 Occient Start INEC43	Project Finis

													, 4. 5		1
11111 161116						.,								Paroved	
1995 GPR MAY JUN														(hecked	
			•••••		•••••				******		ļ ļ				
JON FEBINAR														Revision	
MOV DEC			******		•••••			••••	••••••					Pev	
AUG ISE							$\  \ $		۰.	י ם				14 Date	Ц
1994 100 JUL	P. P.		$\Pi \cdot I$	Π1	٠. <u></u> .	<u> 1</u>								Seet 13 of	
PR MAY	RING	Ш	Ш	ЦΙ							20RT			5	
BINARIA	ON LTO				*******		••••••				I SUPPORT				
1993 1997 JUN JUN FEBINGA IAPRINAY JUN JUL JAUG ISEP 1001	PERFORMANCE MONITORING POST CLOSURE PERFORMANCE										PROJECT				
1993 NOV DEC	ST CLO										13			15	DEMENTATION
	PERF POST	1 -1								_	DIRE			EG&G ROCKY FLATS OPERABLE UNIT #04	FMEDI
707 FLT		179	179	33	33	33	33	33	33	33		3 28			
E E		45	5	37	0	10	38	8	0	02		318		EG&G OPER	SAND BONDS
ORIG DUR		2	45	37	0	2	38	88	0	2		378			S
FINISH		12,011.94	12,301,94	5,011.94	5,01,94	1930194	215EP94	75EP94	75EP94	215EP94		2811895			
EARLY START		ਭ	7		7	3	7	7		8SEP44 2		434			
SIE		- 12H	. IZHA	1249794	6.101	1019	29.00	29.00	N BSEP44	1		19000			
		SSESSHE	ESSMENT	DRFT PST CLSR PRFRMNCE & ASSESSMENT	ESSMENT	E E	¥	ESSMANT	3455355	SSESSME				ž	_
		MINC & A	INCE ASS	E 6 ASS	IC & A55	ASSESS	SSESSHE	E & ASS	INCE E A	MCE L A		-		Activity Barfarly belon Critical Activity Progress Bar Incar Dates Allestore/Flop Activity	
		SR PRF	PRFORM	PRFRMI	PRFRM	RMICE	MANCE A	PRFRHMO	E POFRI	PRF R		SUPPOR		tical Activates Ber	
		PST CL	LOSURE	1 6158	ST CLSR	PST PRF	PERFOR	LOSURE	CLOSUR	CLOSUR		AGEMENT			
		FENT OF	P05T C	08F1 PS	FINLP	FINE	CLOSURE	P05T C	AL POST	IIAL PSI		ECT HGR		*/¢	
DESCRIPTION		PUBLIC COMMENT OF PST CLSR PRFRING & ASSESSMEN	DRAFT FINAL POST CLOSURE PREDRHANCE ASSESSMENT	PREP FINL	SUBMI DRFI FINL PSI CLSR PRFRMIC & ASSESSMENT	TRNSHT DRFT FINL PST PRFRINCE C ASSESSMENT	FINAL POST CLOSURE PERFORMANCE ASSESSMENT	PREP FINAL POST CLOSURE PRFRANCE & ASSESSMANT	SUBHIT FINAL POST CLOSURE PRERINCE & ASSESSMEN	TRESHIT FIRM PST CLOSURE PRERHICE & ASSESSMEN		PROGRAM/PROJECT HANAGEMENT SUPPORT			_
,		PUB	DRAF	88	SUB	T.S.	FINA	PR	SUB	TRR		PROGR		SADV93 12NDV93 12NDV93	1530845
ACTIVITY ID		40634340	40634400	40634410	40634420	40634430	40634500	10634510	40634520	40634530		10660000		larget bate SWDV93 Plot Date 12NDV93 Data Date 12NDV93 Project Start 1DEC92	Project Finish 15JUN95
0011		406	406	406	406	406	406	106	406	406		406		large   Plot   Data   Projec	Proje

.. 1

	10 DESCRIPTION	START FINISH	B	DUR FLT	OCT NOVIDEC JAN FEBINAR PAR HAR JUNIJUL PUGISEP TOCT NOVIDEC JAN FEBINAR PAR HAR JUNIJUL PUG
					PHASE II RCRA FACILITY INVESTIGATION PROCURE SUBCONTRACT
40711000	REDUEST FOR PROPOSAL	28JUL93A 27AUG93A	92	0	
40212000	PROPUSAL	27AUG43A 285EP43A	5]	0	
40713000	TECHNICAL EVALUATION	250CT93A INDV93A	10	0	
40714000	COST EVALUATION	290CF93A 12NOV93	10	-	
40715000	LETTER CONTRACT	L2HDV93 12HDV93	-	-	
40716000	NEGOTIATIONS	1540493 708,093	15	15 30	E.
40717000	ANARD	80.6.03	0	0 30	39
			Ì		WORK PLAN
40721000	PROJECT SCOPING	EPYDNOS EPYDH21	02	10	
40722000	WORK PLAN DEVELOPHENT	ISNOV93 2FEB94	20	20	
40722109	SUBMIT PHASE II DRAFT MORK PLON CIRG 17 INTERNES	23HAR94	0	0	0
40722204	SUBHIT PHASE II DRAFT WORK PLAN CIAG 17 EXTERNED	140084	0	0	0
40722210	INCORPORATE COMMENTS PH 11 PLON	15APR94 23JUN94	44	44	
40722309	SUBMIT PHASE II FINAL MORK PLAN (1966 12 EXTERNE)	24JUN9.	0	0	0
					PRE-FIELD INVESTIGATION ACTIVITIES
10730000	M081112a110N	190694 200194	<b>\$</b>	49 169	V5
10731000	PERHIIS	19UG94 265EP94	40	40 178	38
40732000	HEALTH & SAFETY PLAN	190694 26SEP94	9	40 178	82
40733000	IRAING	19UG94 26SEP94	0	40 17	8/1
40734000	QA/QC	1200694 700194	0)	40 16	
					DIRECT PROJECT SUPPORT
40741000	PROJECT MANAGEMENT SUPPORT	10C143A 70C144	291	224 16	691
40742000	GEDSCIENCES	1007930 200194	241	224 16	591
40243000	0A/DC	28 JUL 93A 700194	241	224 16	691
larget Date SHOV93 Plot Date 12MOV93 Data Date 12MOV93 Provect Start 1DECQ2	SHOV93 [20094]			EG&G ROCKY FLATS OPERABLE UNIT #04	KY FLATS  Date Revision Checked Recoved  UNIT #04
TO JECT FINES	tropect Finish 15JUN'15 Ici Prinavera Systems, Inc.		<u> </u>	SOLAR PONOS	REMEDIATION